VILLAGE OF ATHENS GROUND WATER SURVEY

1974

Ministry of the Environment

The Honourable
William G. Newman,
Minister

Everett Biggs,
Deputy Minister

MINISTRY OF THE ENVIRONMENT

VILLAGE OF ATHENS

GROUND WATER SURVEY

GROUND WATER DEVELOPMENT SECTION

PROJECT CO-ORDINATION BRANCH

D. J. ANDRIJIW

1974

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GROUND WATER SURVEY

INTRODUCTION

A ground-water survey in the vicinity of the Village of Athens was conducted to determine the feasibility of utilizing local ground-water resources as a source of water supply for the village. The survey was conducted as part of a proposed municipal water works program for Athens. If ground-water conditions proved to be favourable, potential test-drilling sites would be indicated and an estimated cost of the test-drilling program would be provided.

The study was confined to an area within a radius of about 1.5 miles (2,4 km.) of the Village of Athens, and consisted of an office study of water-well records, topographic maps, and geologic and topographic features. Water samples were collected from the bedrock wells in the vicinity to determine the chemical quality of ground water in the area.

The water-well records of the study are listed in Table 1. The location of each well is shown in Figure 1. The well numbering system used in this report relates to the permanent coding numbers of the Ministry of the Environment.

PRESENT SUPPLIES AND REQUIREMENTS

Residents within the study area obtain water supplies from privately-owned drilled wells which terminate in the bedrock.

The Ministry's Technical Services Branch provided the following information. The present population of Athens is 1,055 and is expected to increase to about 1,600 by the end of the 20-year design period. Assuming a maximum-day to average-day demand ratio of 2.5 to 1 and an average daily consumption of 100 gallons (0,45 m^3) per person, a well water supply capable of yielding 111 gpm ($8,4 \times 10^{-3} m^3$/sec.) on a perennial basis and 273 gpm ($2,1 \times 10^{-2}$ m^3/sec.) on a short-term basis, is required for the design period. Storage would be required to meet peak-hourly and fire-flow demands.

GEOLOGY

Bedrock

The bedrock in the area consists of Paleozoic sedimentary rocks of Cambrian and Ordovician Age. Athens is underlain by the March formation of Lower Ordovician Age. The formation is composed of thick beds of grey, calcareous sandstone, alternating with thick and thin beds of blue-grey dolomite. The formation outcrops at several locations in the Athens area.

The March formation is underlain by the Nepean formation of Upper Cambrian or Lower Ordovician Age. The Nepean formation consists of a coarse-grained sandstone and is found outcropping at several locations.

The bedrock surface forms a relatively flat plain in the area north of Athens. To the south of Athens, the bedrock surface contains a valley or channel trending south south-west. The bedrock surface in the channel is approximately 100 feet (30,48 m)lower than the bedrock surface in the central part of Athens.

OVERBURDEN

The overburden in the study area consists primarily of Pleinstocene deposits of glacio-marine origin.

The overburden material around Athens consists predominantly of marine clay and sands. Hardpan and boulders are recorded in a few of the water-well records. This material was deposited in the former Champlain Sea during the Wisconsinan de-glaciation.

The clay and sandy loam overburden to the north of Athens is quite thin while in the village, the overburden attains a thickness of up to 20 feet (6,01 m). The overburden in the bedrock channel consists of clay or hardpan and boulders and attains a thickness of up to 46 feet (14,02 m).

HYDROGEOLOGY

Bedrock

The dolomite and sandstone beds of the March and Nepean formations are the primary source of water for drilled wells in the Athens area. Water in the bedrock moves primarily through interconnected openings such as fractures, joints and bedding planes. Water in interconnected, intergranular pore spaces, contribute to storage in the aquifer rather than well yields. The yield from a bedrock well is dependent upon the number, size, and interconnection of the openings which the well intercepts.

The specific capacity is a measure of the size and interconnection of openings of a bedrock well. Specific capacities of wells near Athens vary from 0.8 to 15 gpm per foot of drawdown ($1,98 \times 10^{-5}$ to $3,72 \times 10^{-3} m^3/sec/m$). Over one half of the wells have specific capacities ranging between 1.0 and 5.0 gpm per foot of drawdown ($2,48 \times 10^{-4}$ and $1,24 \times 10^{-3} m^3/sec/m$). The bedrock wells penetrate from 13 to 145 feet (3,96 to 44,2m) into the rock with many of the wells encountering water after 40 to 70 feet (12,19 to 21,34 m) of bedrock penetration.

Based on the specific capacities, yields from the bedrock are quite variable. However, many are high enough to indicate that the desired quantities of water can be located. Test drilling of the bedrock aquifer is warranted.

OVERBURDEN

In the overburden, water is transmitted through intergranular openings in the sediments and hence the sorting, shape and grain size of the overburden materials affect its ability to transmit water. Water movement through glacial materials varies greatly. Water movement is slow in both vertical and horizontal directions through fine-grained materials such as clay or poorly sorted material such as till, due to the low permeability of the materials. These materials are poor aquifers. Coarse-grained materials such as sands and gravels have high permeabilities and can be fair to excellent aquifers.

In the Athens area, there are no drilled wells that are completed in the overburden. This is probably due to the fineness and poor sorting of the overburden materials and to the fact that the overburden materials are generally thin and have limited storage.

Therefore, the overburden materials in the area do not appear to permit the construction of large capacity water wells.

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WATER QUALITY

Chemical

Twenty-two well-water samples were collected from selected wells to determine the chemical quality of the ground water in the bedrock aquifer that underlies the study area. The results of the analyses are shown in Table 2.

In general, the chemical quality of the well-water samples collected meet the water quality criteria of the Ministry of the Environment for public supplies.

The water from the bedrock aquifer is very hard. Six of the sampled wells border on or exceed the Ministry's criterion of 500 ppm for total dissolved solids. The iron concentration in seven of the sampled wells exceed the Ministry's criterion of 0.3 ppm.

The nitrate concentration in two of the wells does not exceed but approaches the Ministry's criterion of 10 ppm. The main sources of this type of contamination are: animal wastes, septic tank effluents and the heavy use of nitrogen fertilizers.

The chemical water quality in the Athens area can be expected to be acceptable except treatment for iron removal may be required.

BACTERIAL

Twenty-two well water samples were taken to assess the general bacteriological quality of ground water in the area. The results of the analyses are shown in Table 3.

Two samples contained only fecal streptoccus. This is indicative of animal wastes that may have been introduced into the well water due to poor well construction.

Generally, the bacteriological quality of the ground water in this area is acceptable. Although the pollution in this area is local and minor in extent, chlorination would safe-guard the quality of water from any well or wells that are put into production.

FAVOURABLE TEST DRILLING AREAS

On the basis of the available hydrogeologic data, the areas to the south, southwest and east of Athens appear to be the most favourable for testing the bedrock. The areas are shown in Figure 1. The penetration depth into the bedrock of any test well will be dependent upon the hydrogeologic conditions encountered. Test wells may penetrate more than 100 feet (30,48m) into the bedrock at the area just southwest of Athens.

COST ESTIMATE OF TEST DRILLING

It is estimated that up to 4 test wells will be required to adequately evaluate the potential of the bedrock aquifer in the area to yield large supplies of water.

A breakdown of the test drilling program and cost is as follows:

Mobilization & demobilization	$ 1,400.00
Moving and Setting Up	1,600.00
Drilling	12,880.00
Development	3,200.00
Pumping Tests	6,400.00
Casing and Associated Materials	1,070.00
Total	$ 26,550.00

Additional funds should be made available to cover the cost of items associated with test drilling, such as property options, ingress and egress facilities, and the temporary restoration of water supplies which may be interrupted during drilling or test pumping. An appropriation of $1,000.00 should be made for such miscellaneous costs.

Because the test wells are to be completed in the bedrock, a test well may be left as a permanent well if it yields a sufficient quantity of water.

CONCLUSIONS

The overburden material in the Athens area does not form a favourable aquifer for the construction of a large capacity production well. The bedrock is the only favourable aquifer in the area. The specific capacities of the bedrock wells are variable, but a good percentage of them indicate that the conditions in the bedrock are sufficiently favourable to warrant a test-drilling program.

The chances of developing a single municipal well capable of yielding 278 gpm ($2,1 \times 10^{-2}$ m^3/sec) are fair. Supplies of ground water of acceptable chemical quality might be developed from the bedrock. Treatment for iron removal may be required.

RECOMMENDATIONS

It is recommended that:

1) Test drilling for Athens be carried out in the areas outlined in the report.

2) A sum of $26,550.00 be provided for test drilling and an additional $1,000.00 allowance be provided for miscellaneous work such as property options, restoration of water supplies in private wells affected during pumping tests, etc.

3) In accordance with Ministry policy, it will be necessary to provide for restoration of water supplies to residents outside the serviced area whose wells are affected by the operation of any new municipal well, to such a degree that an adequate supply cannot be obtained by means of a shallow or deep well pump.

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MINISTRY OF THE ENVIRONMENT

Date

Prepared by

Table Summary of Water Well Records

P1

Well No	Location and Elevation	con	lot	Owner	Driller	year	Well Type	Well Diameter (inches)	Depth (feet)	Static Level (feet)	Pumping Test (gpm) (hrs)	Pumping Level (feet)	Quality	Use	Remarks. Log. etc.
2	ATHENS 415			COMMUNITY FIELD	McCARTHY	49		6	69	20	5 -	-	FR	D C	0 to 4 lo 69 #69
7	398			ENGLISH CHURCH PARSONAGE	McCARTHY	54		6	67	11	15 -	12	FR	D	0 ENTIRE lo 47 sd 67 #60
15	387			HOLINESS MOVEMENT CHURCH	GOODBERRY	55		6	35	5	10 ½	6	FR	D	0 cl B ch 12 lo 35 #30
23	387			TOWN HALL	McCARTHY	56		6	55	10	40 30	15	FR	D P	0 sd, lam 12 cl 20 2c sdst 55 #50
26	320			C. BARRINGTON	MORRISON	56		4	44	10	5 '	14	FR	D	0 to 4 lo 44 #40
31	325			J. EDMUND	MORRISON	57		4½	43	7	5 '	9	FR	D	0 sdst 43 #42.
34	405			HARRY TODD	McCARTHY	57		6	74	10	5 ¼	74	FR	D	0 cl 6½ lo 74 #72
36	360			L. SCOTT	MORRISON	57		4½	90	38	5 '	45	FR	D	0 sdy lam 12 sdst 90 #80-90
45	403			J. DIER	MORRISON	58		4	48	8	5 ⅓	10	FR	D	0 sdy lam 6 sdy lo 48 #46.
46	402			A. KAVANAUGH	MORRISON	58		4	128	Flow	4	-	FR	D	0 sdy 19 sdy lo 128 #128
48	405			C. COVILLE	MORRISON	58		4	61	15	5 ½	17	FR	D	0 sdy lam 13 13 sdy lo 61 #60

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Table 52 Summary of Water Well Records

Date

Prepared by

Well No	Location and Elevation	con	lot	Owner	Driller	year	Well Type	Well Diameter (inches)	Depth (feet)	Static Level (feet)	Pumping Test (gpm) (hrs)	Pumping Level (feet)	Quality	Use	Remarks Log etc
49	ATHENS 352			L. FOLEY	MORRISON	58		4	53	17	5 ½	17	FR	D	O earth 6 sdst 53 *53
52	360			BAPTIST CHURCH PARSONAGE	MORRISON	58		4	75	15	5 1	18	FR	D	O cl, stns & sdst 75 *73
54	380			E. COATES	MORRISON	59		4	66	15	8 ½	18	FR	D	O cl, boom 13 sdst 66 *66
57	377			C. SCOTT	LITTLE	59		5	50	15	7 ¾	45	FR	D	O cl, boom 1 sdst. *40 50
64	378			A. YOUNG	KENNY	59		6¼	68	0	15 ½	0	FR	D	O cl 10 sdst 68 *68
70	415			F. SHIRE	MILLER	60		2	70	11	7 2	18	FR	D	O sdy boom 2 ls 70 *70
72	403			UNITED CHURCH PARSONAGE	DAVIES-MORRISON	60		4	87	48	5 ½	48	FR	D	O sdy boom 9 sdy ls 87 *86
80	410			R. ALGUIRE	MORRISON	60		5	72	8	5 ½	10	FR	D	O hy ls 52 sdst 72 *70 ? ?
81	395			ATHENS HIGH SCHOOL	MORRISON	61		5	153	50	25 2	65	FR	PS	O sdy cl, stns & ls 153 *150
95	385			ATHENS DISTRICT HIGH SCHOOL BOARD PRINCIPAL	MORRISON	62		6¼	106	18	10 1	40	FR	D	O sdy cl 6 sdst 106 * BC 104
96	360			E. GREEN	MORRISON	62		5	90	25	5 ½	25	FR	D	O sdy cl 6 sdst 90 * BB

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Table P3 Summary of Water Well Records

Date

Prepared by

Well No	Location and Elevation	con	lot	Owner	Driller	year	Well Type	Well Diameter (inches)	Depth (feet)	Static Level (feet)	Pumping Test (gpm) (hrs)	Pumping Level (feet)	Quality	Use	Remarks Log, etc
97	ATHENS 380			J. HUDSON	T. DAVIS	62	●	4	69	10	5 ½	12	FR	D	o loam & sdst 69 #68
98	408			S. ROSS	T. DAVIS	62	●	4	83	0	5 ½	6	FR	D	o Loam & sdst 83 #82
99	365			D. WELCH	H. DAVIS	62	●	5	50	5	10 ½	14	FR	D	o sd 4 lo 50 #48
100	368			H. REUVERS	T. DAVIS	62	●	4	77	25	5 ½	28	FR	D	o cl. loam 10 sdst 77 #76
104	375			A. TEDFORD	MORRISON	63	●	4	64	0	8 '	8	FR	D	o sdy cl, stns 4 to 30 30 sdst 64 #24, 64
116	393			R. SCOTT	H. DAVIS	64	●	5	89	0	10 ½	10	FR	D	o cl, sd 3 to 4, lo 89 #86
120	415			R. SCOTT	MILLER	64	●	2	73	20	6 2	25	FR	D	o cl 6 to 73 #70-73
1532	REAR OF YOUNG'S E SCH IT 385	III	17	M.V. BROWN	THOMPSON (ONT 57		●	6¼	40	6	13 -	25	FR	D	o loam, cl 3 sdst 40 #30, 40
2826	350	VIII	15	R. ALGUIRE	MORRISON	64	●	4	67	15	5 '	18	FR	D	o to 4 lo 25 sdst 67 #66
2827	322	VIII	17	R.M. KELSEY	MORRISON	64	●	5	42	FLOW AT 3GPM	10 -	—	FR	D	o loam 4 cl 29 29 sdst 42 #42
2832	390	IX	15	J.F. CONLEY	H. DAVIS	66	●	5	97	15	10 ½	30	FR	D	o sd, cl 50 sdst 97 #95.

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Table **Summary of Water Well Records**

Date

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p4

Well No	Location and Elevation	con	lot	Owner	Driller / year	Well Type	Well Diameter (inches)	Depth (feet)	Static Level (feet)	Pumping Test (gpm) (hrs)	Pumping Level (feet)	Quality	Use	Remarks Log etc
3116	RGHR OF Stanley & ESCOTT 340	VIII	10	G. McMANUS	O. HENRY 51		6	60	8	8 ½	—	FR	D S	O sd / lo 60 # 35, 58
3128	400	VIII	7	C PATTIMORE	MORRISON 61		5	85	15	5	15	FR	D S	O PRES 22. 24 # 83 29 lb 85
3132	390	VIII	10	W. EARL	LITTLE 52		6	30	9	13 ½	14	FR	D	O sdy loam 15 # 21, 14 lb 20 sdst 30 29
3133	380	VIII	10	E MOULTON	MORRISON 59		4	34	5	8 ½	8	FR	D	O cl, loam 7 sdst 34 # 33
3135	380	VIII	11	R. SCOTT	H. DAVIS 64		5	75	8	10 ½	15	FR	D S	O cl 10 lo 75 # 72
3137	315	VIII	12	D BARRINGTON	MORRISON 65		5	30	FLN	15 2	10	FR	D	O to 04 cl 12 sdst # 28
3138	350	VIII	15	A. JACKSON	MORRISON 57		4	54	10	5 ½	10	FR	D	O DUG 18 lo 54 # 53
3141	350	VIII	15	M. VEENSTRA	MORRISON 64		5	70	40	10 2	60	FR	D	O loam 3 sdst 70 # 40-70
3142	390	VIII	16	D. WADE	MILLER 63		2	91	6	8 2	15	FR	D	O hp, bldr 46 gvte 91 # 91
3143	345	VIII	16	GILROY	HALL 66		5	115	6	10 ½	24	FR	D	O cl 3 hp 39 sdst 115 # 45, 75, 110
3149	400	IX	3	CHAS EARL	LITTLE 52		6	50	15	13 ½	25	FR	D S	O loam 2 lo 40 # 33, 50 40 sdst 50

MINISTRY OF THE ENVIRONMENT

Table **Summary of Water Well Records**

Date

Prepared by

Well No	Location and Elevation	con	lot	Owner	Driller / year	Well Type	Well Diameter (inches)	Depth (feet)	Static Level (feet)	Pumping Test (gpm) (hrs)	Pumping Level (feet)	Quality	Use	Remarks Log, etc
3152	REAR OF YOUNG & ESCOTT 400	IX	8	H CHANT	H. DAVIS 67	•	5	68	12	10 ½	16	FR	D S	O sd, cl 3 to 68 *58
3156	400	IX	11	McCANN'S Bank	MORRISON 58	•	4	61	7	10 2	30	FR	com	O to, stns & sdy to 61 * 40-61
3157	400	IX	11	V. HEFFERMAN	MORRISON 65	•	5	40	8	10 3	12	FR	D	O clay 3 sd et 40 * 30-40
3158	400	IX	13	R. WOOLWARD	MORRISON 52	•	5⅝	69	flow	-	-	FR	D	O hp 15 to 69 * 68
3159	420	IX	14	J. HOWARTH	MILLER 67	•	2	64	6	5 2	15	FR	D	O to, sd 3 to 64 * 63
3168	425	IX	12	W BRADLEY	JONES 65	•	6½	39	24	5 1	24	FR	D	O clay 1 to 39 * 36
3172	430	IX	14	B LAWSON	H. DAVIS 65	•	5	56	8	10 ½	13	FR	D	O sd 3 sd et 56 * 54
3173	430	IX	14	D. LAWSON	H DAVIS 65	•	5	62	12	10 ½	15	FR	D	O sd 4 to 62 * 60
~~#466~~	ATHENS 385			FIRE HALL	MORRISON 70	•	5	112	24	10 1	26	FR	FIRE HALL	O EARTH & Stns & gdy to 112 * 100-112
3136	REAR OF YOUNG & ESCOTT	IX	11	U. NERBURG	MORRISON 58	•	4	65	16	8	16	FR	D S	O earth 15 hp, bldr 42 #2 sdy to 65 * 55-65
A	ATHENS			BLANCHARDS GARAGE	BEAVER 72	•	5¼	85	13	12	13	FR	com	O cl & sd et 13 to 85 * 81

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Table 2 Summary of Water Analyses

Prepared by S. Sisson

ATHENS VILLAGE

Source and Number	Location	Date Sampled	pH	Colour Hazen Units	Turbidity Jackson Units	Specific Conductance mmhos at 25°C	Total Dissolved Solids (ppm)	Total Hardness as $CaCO_3$ (ppm)	Alkalinity as $CaCO_3$ (ppm)	Chemical Constituents in parts per million (ppm)											Remarks
										Chloride Cl	Sulphate SO_4	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potasium (K)	FREE AMMONIA N	TOTAL KJELDAHL N	NITRITE N	NITRATE N	
1 WATER WELL	KELSEY 2827	JUNE 25 1974	7.5			485	290	220	213	5	59	.80	69	12	25	1.3	.1	.2	<.02	<.2	
2 "	GILROY 3143	"	7.7			580	380	280	187	7	135	.65	83	17	21	3.5	.1	.2	<.02	<.2	
3 "	WADE 3142	"	7.9			520	330	264	200	10	90	.15	51	33	18	2.3	.1	.2	<.02	<.2	
4 "	A. JACKSON 3138	"	7.3			720	480	392	285	46	60	8.2	107	30	12	1.7	.1	.2	<.02	<.2	
5 "	R. ALGUIRE 2826	"	7.3			780	500	408	307	53	69	.10	107	34	22	2.4	.1	.2	<.02	<.2	
6 "	M V BROWN 1552	"	7.5			520	300	268	238	27	22	<.05	74	20	13	1.4	.1	.2	<.02	<.2	
7 "	J F CONLEY 2832	"	7.4			570	330	340	298	5	24	<.05	86	30	5	.22	.1	.2	<.02	1.8	
8 "	FIRE HALL 4466	"	7.3			640	400	352	288	24	49	.15	94	28	13	2.2	.1	.2	<.02	1.4	
9 "	D LAWSON 3173	"	7.5			450	270	256	221	5	20	<.05	70	19	2	0.7	.1	.2	<.02	3.2	
10 "	W BRAIKEY 3168	"	7.5			475	260	280	249	4	17	<.05	69	26	1	0.7	.1	.2	<.02	1.4	
11 "	R SCOTT 120	"	7.2			1180	260	456	387	131	23	<.05	122	37	69	5.1	.1	.3	<.02	8.0	
12 "	A. KAVANAGH 4	"	7.4			540	300	272	231	21	26	.50	70	23	9	2.1	.1	.2	<.02	<.2	

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Table 2 Summary of Water Analyses

Prepared by S. S. Sisson

V2

Source and Number	Location	Date Sampled	pH	Colour Hazen Units	Turbidity Jackson Units	Specific Conductance mmhos at 25°C	Total Dissolved Solids (ppm)	Total Hardness as $CaCO_3$ (ppm)	Alkalinity as $CaCO_3$ (ppm)	Chemical Constituents in parts per million (ppm)											Remarks
										Chloride Cl	Sulphate SO_4	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium K	Free Ammonia N	Total Kjeldahl N	Nitrite N	Nitrate N	
13	W EARL 3132	JUNE 25 1974	7.2			1160	760	492	336	132	73	<.05	126	42	53	5.4	.1	.2	<.02	8.8	
14	C PATTEMORE 3128		7.2			760	530	408	312	35	74	.20	94	39	10	13.0	.1	.3	<.02	.8	
15	H. CHANT 3152		7.4			690	460	380	282	35	65	<.05	94	35	8	2.4	.1	.2	<.02	.2	
16	McCANN'S BOCK 3156		7.4			640	400	352	277	34	42	.10	82	36	12	4.9	.1	.2	<.02	.4	
17	BLANCHARDS SUPERTEST A		7.4			650	440	336	252	52	48	1.1	82	32	16	2.3	.1	.2	<.02	<.2	
18	L FOLEY 49		7.3			570	370	332	258	26	65	.15	94	33	2	2.7	.1	.2	<.02	<.2	
19	HIGH SCHOOL 95		7.2			830	560	408	313	64	40	<.05	104	36	31	6.6	.1	.2	.04	<.2	
20	COMM CENTRE 2		72			700	500	396	288	52	115	.70	98	37	12	3.4	.1	.2	<.02	<.2	
21	DEARBINGTON 3137		7.5			800	560	300	267	49	52	.80	59	38	31	3.4	.1	.2	<.02	<.2	
22	V NERBURG 3136		7.7			470	270	252	208	5	34	<.05	56	27	16	3.0	.1	.1	<.02	4.2	

MINISTRY OF THE ENVIRONMENT

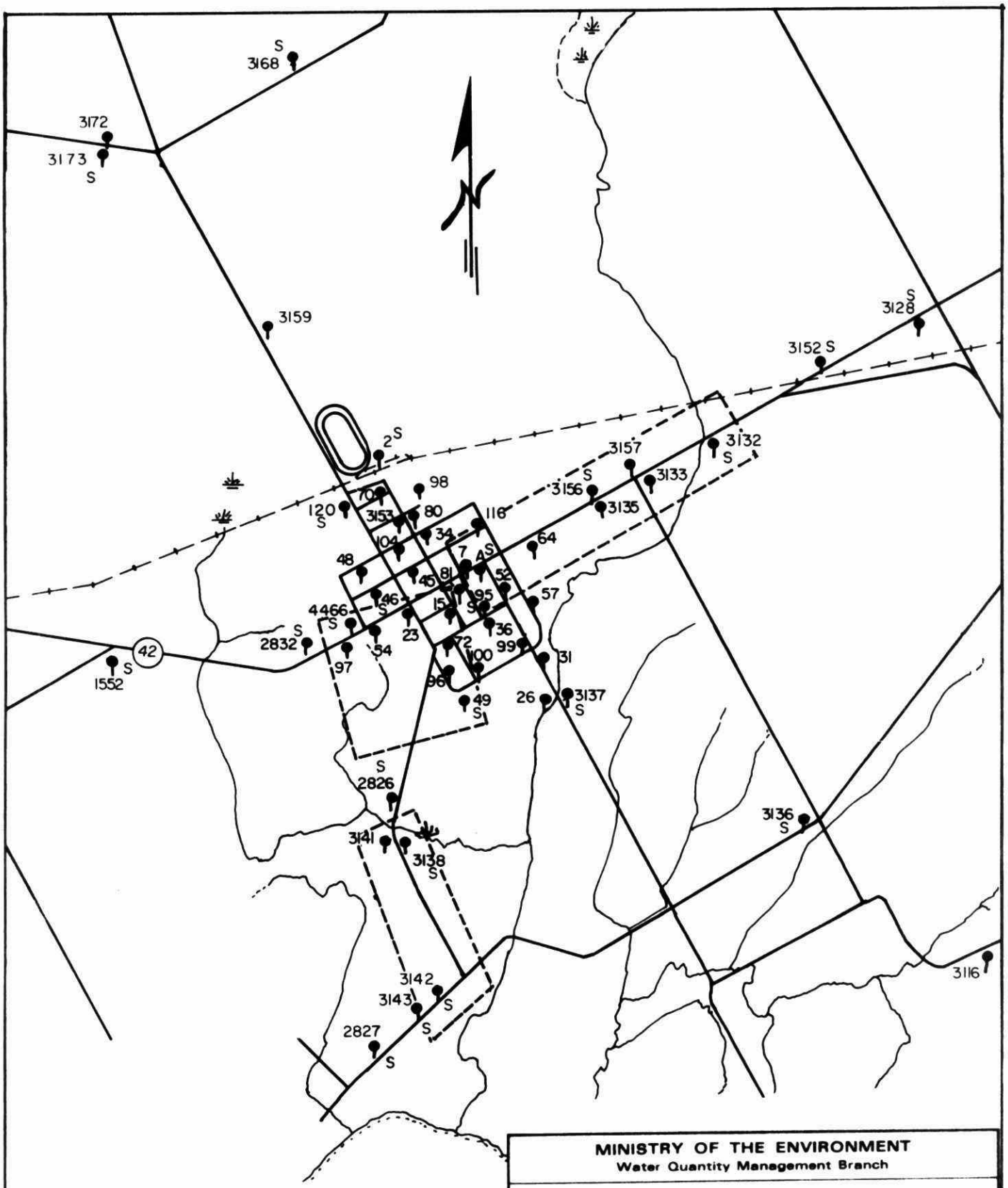
P1 TABLE 3 SUMMARY OF BACTERIOLOGICAL RESULTS ATHENS VILLAGE PREPARED BY J. SISSON

LOCA ION	DATE	FECAL COLIFORMS	FECAL STREPTOCOCCUS	TOTAL COLIFORMS	BACKGROUND COLONIES	
R.M KELSEY 2827	JUNE 25 1974	0	0	0	0	
GILROY 3143	"	0	0	0	0	
D WADE 3142	"	0	0	0	0	
A. JACKSON 3138	"	0	0	0	0	
R ALGUIRE 2826	"	0	0	0	0	
M.V. BROWN 1552	"	0	0	0	0	
J.F. CONLEY 2832	"	0	0	0	0	
FIRE HALL 4466	"	0	0	0	0	
D. LAWSON 3173	"	0	0	0	0	
W BRADLEY 3168	"	0	0	0	2	
R SCOTT 120	"	0	0	0	0	
A KAVANAGH 46	"	0	0	0	0	

MINISTRY OF THE ENVIRONMENT

82 TABLE 3 SUMMARY OF BACTERIOLOGICAL RESULTS PREPARED BY

LOCATION	DATE	FECAL COLIFORMS	FECAL STREPTOCOCCUS	TOTAL COLIFORMS	BACKGROUND COLONIES	
W EARL 3132	JUNE 25 1974	0	0	0	0	
C PATTEMORE 3128	"	0	0	0	0	
H CHANT 3152	"	0	0	0	0	
McCANN'S BOWL 3156	"	0	0	0	0	
BLANCHARDS GARAGE A	"	0	4	0	0	
L FOLEY 49	"	0	0	0	0	
HIGH SCHOOL 95	"	0	0	0	0	
COMM CENTRE 2	"	0	4	0	0	
D BARRINGTON 3137	"	0	0	0	0	
V NERBURG 3136	"	0	0	0	0	



LEGEND

- Drilled well in bedrock
- s Sample location
- Favourable test-drilling area

MINISTRY OF THE ENVIRONMENT
Water Quantity Management Branch

VILLAGE OF ATHENS

Ground Water Survey

Date: June 74	Scale:	Drawing No:
Prepared by: SFS	1 in = 2000 ft	Figure 1